SSA-R1001
SSA-R1101

RFID Reader

user manual

imagine the possibilities

Thank you for purchasing this Samsung product.
To receive more complete service,
please visit our website.
www.samsungsecurity.com

SAMSUNG

safety information

CAUTION

RISK OF ELECTRIC SHOCK.
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK) NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol indicates that dangerous voltage consisting a risk of electric shock is present within this unit.

This exclamation point symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING

- To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

WARNING

1. Be sure to use only the standard adapter that is specified in the specification sheet.
   Using any other adapter could cause fire, electrical shock, or damage to the product.
2. Incorrectly connecting the power supply or replacing battery may cause explosion, fire, electric shock, or damage to the product.
3. Do not connect multiple controllers to a single adapter. Exceeding the capacity may cause abnormal heat generation or fire.
4. Securely plug the power cord into the power receptacle. Insecure connection may cause fire.
5. When installing the controller, fasten it securely and firmly. The fall of controller may cause personal injury.
6. Do not place conductive objects (e.g. screwdrivers, coins, metal parts, etc.) or containers filled with water on top of the controller. Doing so may cause personal injury due to fire, electric shock, or falling objects.
7. Do not install the unit in humid, dusty, or sooty locations. Doing so may cause fire or electric shock.
8. If any unusual smells or smoke come from the unit, stop using the product. In such case, immediately disconnect the power source and contact the service center. Continued use in such a condition may cause fire or electric shock.
9. If this product fails to operate normally, contact the nearest service center. Never disassemble or modify this product in any way. (SAMSUNG is not liable for problems caused by unauthorized modifications or attempted repair.)
10. When cleaning, do not spray water directly onto parts of the product. Doing so may cause fire or electric shock.

CAUTION

1. Do not drop objects on the product or apply strong blows to it. Keep away from a location subject to excessive vibration or magnetic interference.
2. Do not install in a location subject to high temperature (over 50°C), low temperature (below -25°C), or high humidity. Doing so may cause fire or electric shock.
3. If you want to relocate the already installed product, be sure to turn off the power and then move or reinstall it.
4. Remove the power plug from the outlet when there is a lighting storm. Neglecting to do so may cause fire or damage to the product.
5. Keep out of direct sunlight and heat radiation sources. It may cause fire.
6. Install it in a place with good ventilation.

7. Avoid aiming the controller directly towards extremely bright objects such as sun.
8. Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.
9. The Mains plug is used as a disconnect device and shall stay readily operable at any time.

FCC Statement

Caution : Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1) This device may not cause harmful interference, and
2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, any cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus.
13. Unplug this apparatus when a card is used. Use caution when moving the cart/ apparatus combination to avoid injury from tip-over.

14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as powersupply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

contents

PRODUCT INTRODUCTION 5

5 Features
5 What's included
6 At a Glance
7 Cable Color Scheme
7 Cable Selection

INSTALLATION AND EXTERNAL CONNECTION 8

8 Installation
9 Precautions on installation
10 External Connection

INITIALIZATION 11

11 Basic Operations

OUTPUT FORMAT 12

12 WIEGAND Output
13 RS-232 Output

TROUBLESHOOTING 14

14 Troubleshooting

PRODUCT SPECIFICATIONS 15

15 Product Specifications

product introduction

FEATURES

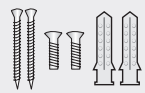
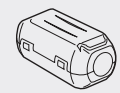
This product is an elegant-looking proximity reader which has the maximum read range of 10cm (4”), can be easily installed on a metal doorframe or the wall. Basically, both SSA-R1001 and SSA-R1101 use the same module with epoxy molding, which guarantees operation in any weather and environment condition. The two different bezels of two models are compatible with each other, meaning one can be replaced with the other according to the wall condition or the applicable situation. With its 3 two-color LED indicators as well as the built-in buzzer, this product is guaranteed to operate stably and correctly.

- 13.56 MHz [MIFARE] Contactless Smart Card Reader
- Compatible with ISO14443 Type A
- 3 Array LED Indicators (red and green) and Built-in Buzzer
- 34 bit Wiegand / RS-232 Data Output
- Control of External LED Indicators
- Control of External Buzzer
- Epoxy Molding
- Reverse Polarity Protection
- Weatherproof

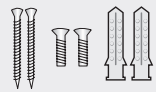
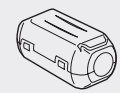
WHAT’S INCLUDED

Check if the following items are included in the product package.

What’s included in SSA-R1001

					
SSA-R1001 Bezel	READER Module	3.5x40mm screws (x2) 3.5x25mm screws (x2) 6x30mm Plastic Anchor (x2)	Quick Guide	CD Manual	Ferrite Core

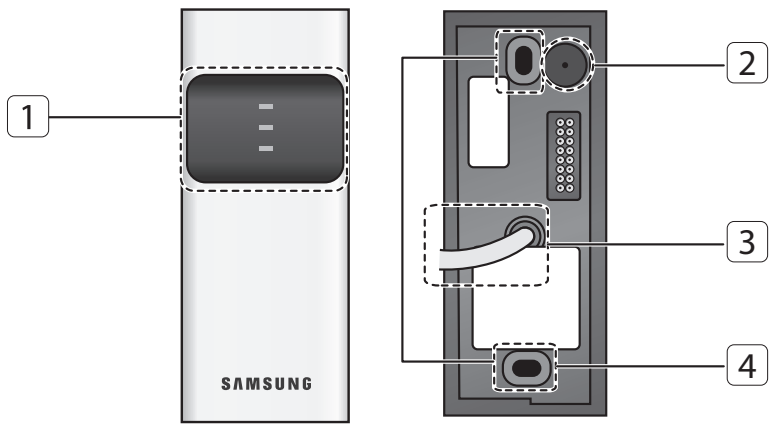
What’s included in SSA-R1101

					
SSA-R1101 Bezel	READER Module	3.5x40mm screws (x2) 3.5x25mm screws (x2) 6x30mm Plastic Anchor (x2)	Quick Guide	CD Manual	Ferrite Core

product introduction

AT A GLANCE

Front/Rear



1	**LED**	Displays the system operation status using red and green indicators.
2	**Buzzer**	Piezo buzzer.
3	**Connection Cable**	Used to connect to the power or I/O cable.
4	**Fixing Hole**	Fixing hole for wall-mounting.

CABLE COLOR SCHEME

Item	Cable Color	Signal Line	Description
Power	Red	DC +12V	DC +12V supplied
	Black	GND	Earth-grounding for power
Input	Blue	Buzzer Control	BUZZER Control Input Port
	Yellow	LED Control	LED Control Input Port
Output	Green	Out Wiegand 0	Wiegand Data 0 Output Port
	White	Out Wiegand 1	Wiegand Data 1 Output Port
Communication	Purple	RS-232(TX)	RS-232 Transmission Output Port
Not used	Gray	NC	Not Connected
	Brown		
	Orange		

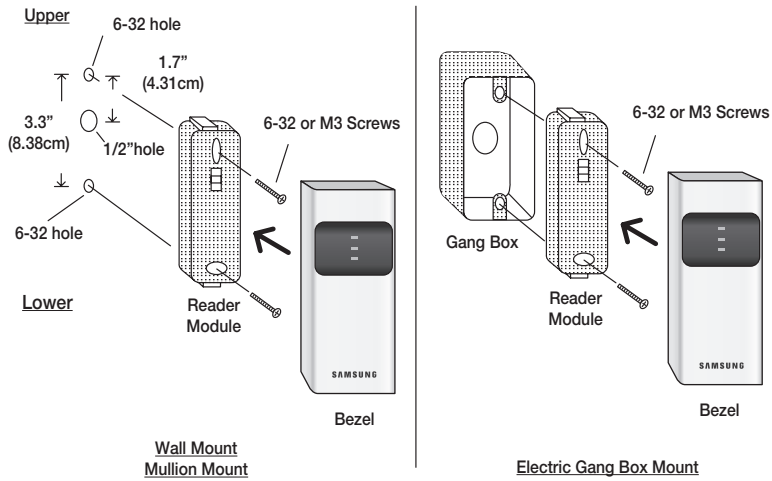
CABLE SELECTION

Item		Cable Type
1	Power (DC12V)	Belden #9409, 18 AWG 2 Conductor, Unshielded
2	WIEGAND Output Buzzer Control LED Control	Belden #9512, 22 AWG 4 Conductor, Shielded
		Belden #9514, 22 AWG 8 Conductor, Shielded
3	RS-232 Cable	Belden #9829, 24 AWG 2-twisted pair, Shielded

INSTALLATION

- Inserted in the doorframe / attached to the wall

1. Two 6-32 or M3 holes are 3.3" (8.38 cm) away from each other vertically; between the two exists one 1/2" hole through which the reader cables are arranged. The midway hole is located 1.7" (4.31cm) down from the upper hole. (If the product is already installed, you can skip the follow step)
2. Insert the reader cables to the midway hole and fix the reader module with two 6-32 or M3 screws.
3. Insert the reader module into the bezel and push it up until you hear a click.

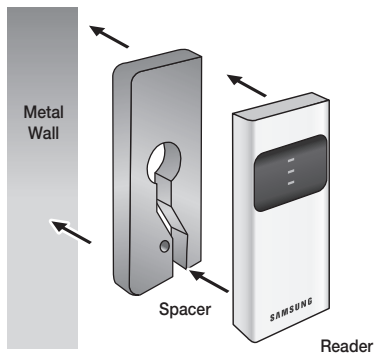


PRECAUTIONS ON INSTALLATION

If installing on a metal wall

If you install the reader on a metal wall, the read range may be reduced.

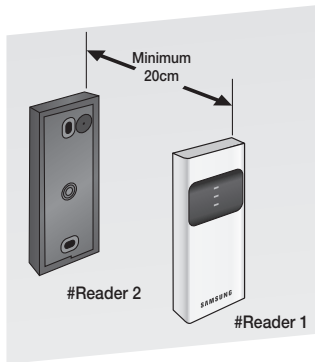
To avoid this problem, it is recommended to insert the spacer between the metal wall and the reader as shown below.



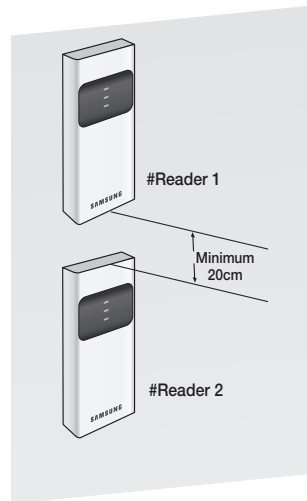
If installing more than one reader side by side or front and back

If you install more than one reader side by side or front and back, the read range may be reduced. In this case, if you present a card to one reader, the other reader may recognize the same card, meaning two readers read the same card simultaneously.

To avoid this problem, keep at least 20 cm of space between the two readers.



<Front and Back>

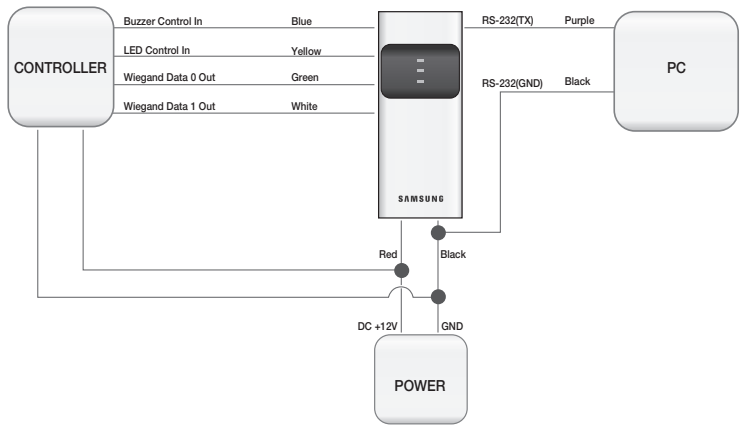


<Side by Side>

EXTERNAL CONNECTION

Wiring Diagram

SSA-R1001/SSA-R1101



Item	Cable Color
Power Supply Unit	Connect the DC+12V to the red line.
	Connect GND to the black line.
Wiegand Connection	Connect the green line of the product to the Wiegand D0 input port of the controller.
	Connect the white line of the product to the Wiegand D1 input port of the controller.
LED Control	To control the LED indicators, connect the yellow line to the output port (relay) of the controller.
Buzzer Control	To control the built-in buzzer, connect the blue line to the output port (relay) of the controller.
RS-232 Connection	Connect to the COM port of the PC. (Connect pin 2 of the DB-9 connector to the purple line; connect the black line of the device (GND) to pin 5 of the DB-9 connector)

initialization

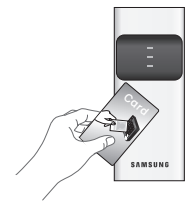
BASIC OPERATIONS

Initial State (when the power is supplied)

When you apply power to the reader, it will sound a beep before entering Standby with the red indicator turn on .

Using the card

Present the card to the reader until you hear a beep and the red indicator turns green.
When the reader has transferred the data to the controller, it returns to Standby with the red indicator turned on and waits for reading the next card.



LED Control

You can control the LED indicator of the device at your preference.
Connect the LED control input line (yellow) to the NO port of the controller relay output, and GND to the COM port.
Set the I/O of the controller so that you can change the color of the LED indicators. While the LED control is working, the green indicator stays solid.
This function not only enables you to change the color representing Standby from red to green, but it can be also applied to make various modifications according to the different I/O settings of the controller.
For more information about the I/O settings of the controller, refer to the user manual of the controller.

Buzzer Control

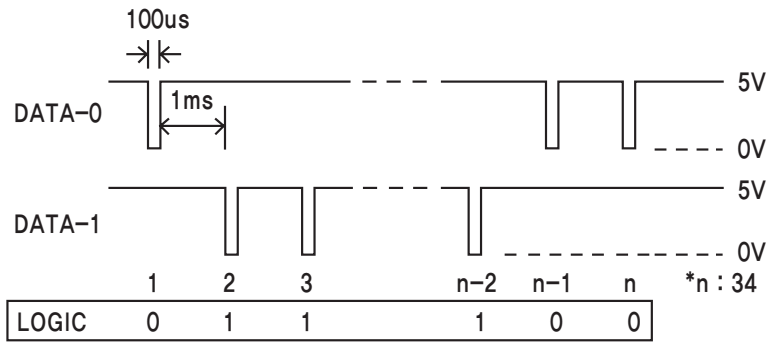
You can control the buzzer of the device at your preference.
You can configure the I/O settings of the controller so that it sounds a beep. While the buzzer control is working, the product keeps sounding the beep.
The controller can use the I/O settings to set the buzzer control so that it sounds an additional beep for authorized or unauthorized access upon user authentication.
Furthermore, you can make various modifications according to the different I/O settings of the controller.
For more information about the I/O settings of the controller, refer to the user manual of the controller.

▪ Card reading is not available while the buzzer control is sounding the buzzer.

output format

WIEGAND OUTPUT

Timing Diagram

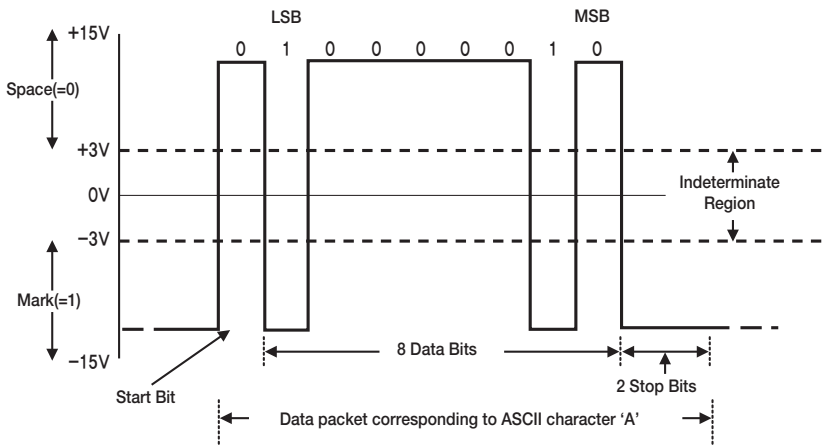


Data Type

- Bit 1 : Even Parity (bit2~bit17)
- Bit2~Bit33 : 4 byte ID number
- Bit34 : Odd Parity (bit18~bit33)

RS-232 OUTPUT

Output Waveform



Data Type

Start (0X02H)	Data (10 Char)	End (0x03H)	LRC
START(0X02H)	DATA (10 Char)	END (0x03H)	LRC

- Check the following settings:
  Baud Rate : 9600bps
  DataBit : 8
  Parity : None
  Stop Bit : 1
- LRC: This is the result of XOR operation of each byte from Start to End.

TROUBLESHOOTING

If the product does not function properly, please see the below for trouble shooting.

PROBLEM	SOLUTION
My card is not read properly.	1) Check the rated voltage specified in the user manual and the catalog. 2) Ensure that you are using an ISO14443 Type A card. - Cards of 125 kHz format can not be used. 13.56 MHz cards of Type B, ISO15693 format can not be used. (Contact the card retailer regarding the card format.) 3) If the problem persists, contact the nearest customer service for your assistance.
When I turn on the product, it sounds a beep with dimly turned on indicator.	1) Ensure that you are using a larger-capacity adaptor than specified in the user manual or the catalog, which should cover the rated current consumption of the reader. If you are using multiple readers that are connected to one adaptor, make sure that the adaptor should be large enough to cover the current consumption multiplied by the reader count. 2) Even with a large adaptor enough to supply adequate power, if the power cable is not a dedicated line (such as communication line or UPT cable), or if it's so long to cause power loss, you'd better replace it with a dedicated line or reinforce it. 3) If the problem persists, contact the nearest customer service for your assistance.
The read range (R/R) of the card differs each time the product reads the card.	1) The characteristics of a card are determined by the nature of the coils used and in the manufacturing process engaged by the card manufacturer. So what you do first is to check that the cards in use are made by the same manufacturer. If you are using cards from different card makers, the read range (R/R) differs by the card, which is the result of normal operation. 2) If you encounter a different read range (R/R) for each card that is made by the same manufacturer, please contact the nearest customer service.

product specifications

PRODUCT SPECIFICATIONS

Item	SSA-R1001	SSA-R1101
Power / Current	DC 12V / Max.80mA	
Reading Time (Card)	30ms	
Input Port	2ea : External LED Control, External Buzzer Control	
Output Port	34bit Wiegand	
LED Indicator	2 Color LED (Red and Green)	
Beeper	Piezo Buzzer	
Operating Temperature	-25°C to +50°C	
Operating Humidity	10% to 90% Relative Humidity Non-Condensing	
Color / Material	Silver with Black/ Polycarbonate	
Dimension (W x H x D(mm))	47.0 x 122.0 x 26.0	75.3 x 122.0 x 26.0
Weight	140g	160g

Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract.
This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

Correct disposal of batteries in this product

(Applicable in the European Union and other European countries with separate battery return systems.)

This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste at the end of their working life. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66. If batteries are not properly disposed of, these substances can cause harm to human health or the environment.

To protect natural resources and to promote material reuse, please separate batteries from other types of waste and recycle them through your local, free battery return system.

SALES NETWORK

SAMSUNG TECHWIN CO., LTD.
701, Sampyong-dong, Bundang-gu, Seongnam-si Gyeonggi-do, Korea, 463-400
TEL : +82-70-7147-8740~60 FAX : +82-31-8018-3745

SAMSUNG TECHWIN AMERICA Inc.
1480 Charles Willard St, Carson, CA 90746, UNITED STATES
Tol Free : +1-877-213-1222 FAX : +1-310-632-2195
www.samsungcctvusa.com

SAMSUNG TECHWIN EUROPE LTD.
Samsung House, 1000 Hillswood Drive, Hillswood Business
Park Chertsey, Surrey, UNITED KINGDOM KT16 OPS
TEL : +44-1932-45-5300 FAX : +44-1932-45-5325

www.samsungsecurity.com
www.samsungtechwin.com

P/No. : Z8100239401A